

electronic device. The present invention can prevent all but a rightful owner from using the device. Moreover, the present invention facilitates the return of the device, if lost or stolen, to its rightful owner by displaying owner information when lockout is activated. The return-to-owner security lockout of the present application utilizes a user interface of the electronic device to display the owner information.

According to the present invention, the return-to-owner security lockout is preferably initiated during a start-up process each time the device is turned 'ON'. The security lockout of the present invention may be initiated at other times during device operation either in addition to or other than during the start-up process. If a valid security bypass input is received after security lockout initiation, the security lockout is deactivated and the electronic device begins normal operation. When a valid security bypass input is not received, the security lockout is activated. While the security lockout is active, the device is disabled and the user interface of the device is used to display owner information. Owner information may be the name and an address and/or telephone number of the owner or a name and an address and/or telephone number of a 'lost and found' service or clearinghouse. Someone other than the rightful owner of the electronic device can use the displayed information to return the electronic device to the owner directly or alternatively, to return the device to the lost and found service that, in turn, forwards the electronic device to the owner.

In one aspect of the invention, a method of return-to-owner security lockout for a portable electronic device is provided. The method comprises receiving a security lockout bypass as an input to the device from a user and comparing the received lockout bypass to a lockout bypass template or expected input to determine whether or not the lockout bypass is valid. If the bypass input does not correspond to the bypass template, the bypass input is considered to be invalid. Further, if no bypass input is received, security lockout is activated. The security lockout disables the device and displays owner information. Where the owner information displayed is contact information for a lost and found service, the method further comprises providing a lost and found service. The service receives the electronic device, uses owner identification information to determine an address or a telephone number of the

owner, and contacts the owner. Either the electronic device is sent to the owner using the address or the owner can pick up the device from the service.

In another aspect of the invention, an electronic device having a return-to-owner security lockout is provided. The electronic device comprises a controller, a memory, a user interface, and a computer program stored in memory. The controller executes the computer program. The computer program, when executed, implements the return-to-owner security lockout according to the present invention. The device displays owner information on the user interface when a security lockout disables the device. Preferably, the security lockout embodied in the computer program implements the method of return-to-owner security lockout of the present invention.

In particular, the computer program contains instructions that, when executed, activate lockout and disable normal operation of the device unless a valid lockout bypass input is received by the device. The specific forms of the lockout bypass input depends on a type of security lockout employed and include, but are not limited to, a password entered via the user interface or a unique key inserted into the device. When the device is disabled, the computer program displays the owner information. The owner information may contain one or more of the owner's name, the owner's address and/or telephone number, and a name, address and/or telephone number of a lost and found service. When lockout is not active and the device is not otherwise disabled, the identification information can be edited so that change of ownership and other information updates can be readily accommodated. The computer program may be stored in memory as either firmware or software.

The return-to-owner security lockout of the present invention provides security for a portable electronic device by denying use to an unauthorized user. Furthermore, the present invention facilitates reuniting the device and owner by virtue of displaying owner information should the device be lost or stolen. Furthermore, according to the present invention, the owner information can be updated if ownership of the electronic device changes through a legitimate means. Certain embodiments of the present invention have other advantages in addition to and in lieu of the advantages described hereinabove. These and other features and advantages of the invention are detailed below with reference to the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The various features and advantages of the present invention may be more readily understood with reference to the following detailed description taken in conjunction with the accompanying drawings, where like reference numerals
5 designate like structural elements, and in which:

Figure 1 illustrates a flow chart of a method of return-to-owner security lockout for an electronic device of the present invention.

Figure 2 illustrates a block diagram of an electronic device having a return-to-owner security lockout according to the present invention.

10 Figure 3 illustrates a block diagram of electronic device having a return-to-owner security lockout according to the present invention in a preferred embodiment as a digital camera.

Figure 4 illustrates a block diagram of an imaging subsystem of the digital camera in Figure 3.

15 Figure 5 illustrates a block diagram of a user interface of the digital camera of Figure 3.

Figure 6A illustrates an example of a display of owner information comprising an owner name and an owner address.

20 Figure 6B illustrates an example of a display of owner information comprising contact information for a lost and found service.

MODES FOR CARRYING OUT THE INVENTION

Associated with securing a portable electronic device by denying use to unauthorized users is the concomitant 'return-to-owner' problem. The return-to-owner problem includes how to identify the owner of a lost or stolen portable
25 electronic device and how to provide for the return of the device to that owner. To reunite a lost or stolen portable electronic device and its rightful owner, a minimum requirement is to be able to identify the owner. A secondary requirement is to have a provision or means for contacting or locating the owner. For example, if a Good Samaritan finds a lost portable device, the Good Samaritan cannot hope to return the